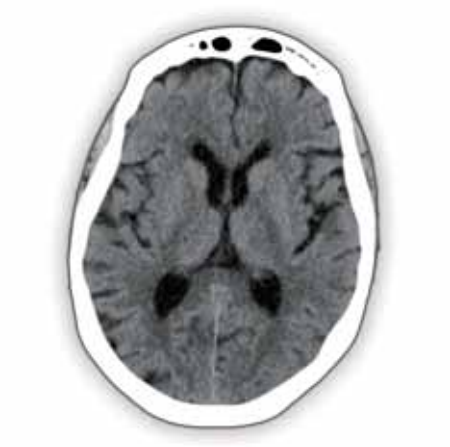
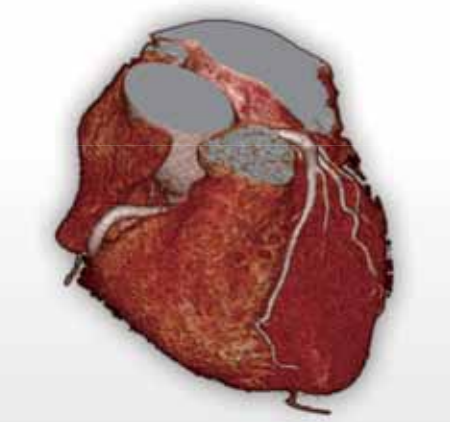
Canon





CT Clinical Image Gallery

Aquilion ONE

GENESIS Edition

Transforming CT

Transforming Clinical Confidence

Table of contents

We gratefully acknowledge the following institutions that contributed to this brochure: Leiden University Medical Center, the Netherlands

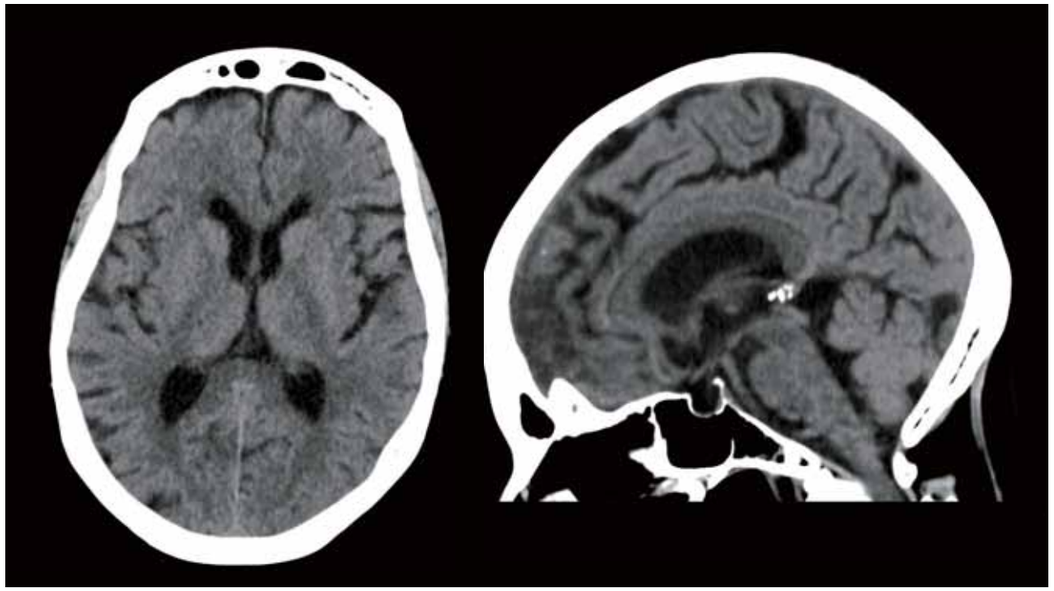
FIRST Integrated

AIDR 3D integrated

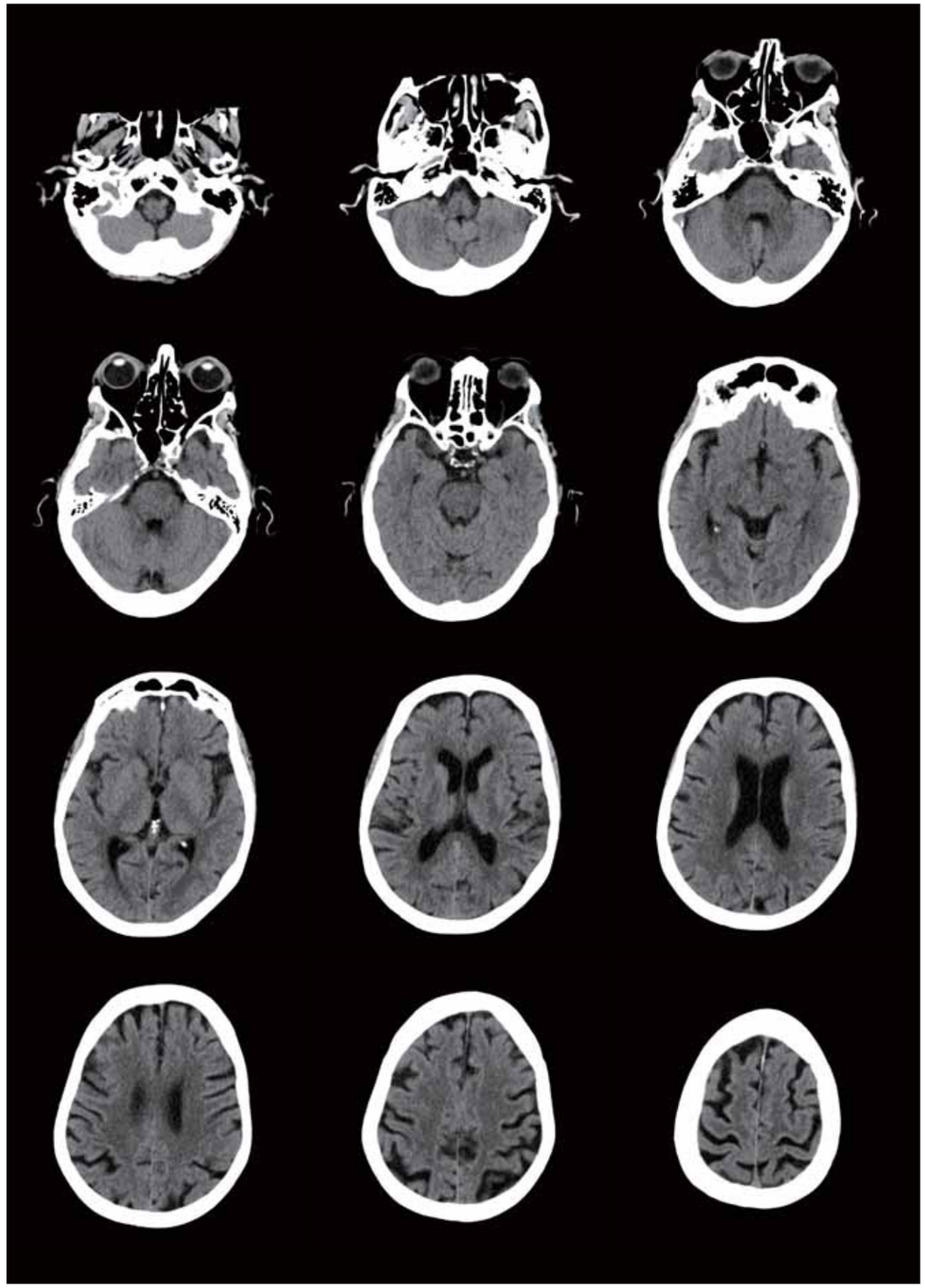
TIA Follow-up

This 61-year-old woman was admitted to the hospital following a TIA. A CT scan was performed to rule out stroke. The scan automatically reconstructed with AIDR 3D Enhanced (Adaptive Iterative Dose Reduction) shows excellent distinction between cortical grey matter and white matter.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Helical	—	0.5 mm x 40	Detail	120	240	0.75	240	AIDR® 3D Enhanced	59.1	948.5	1.99	0.0021



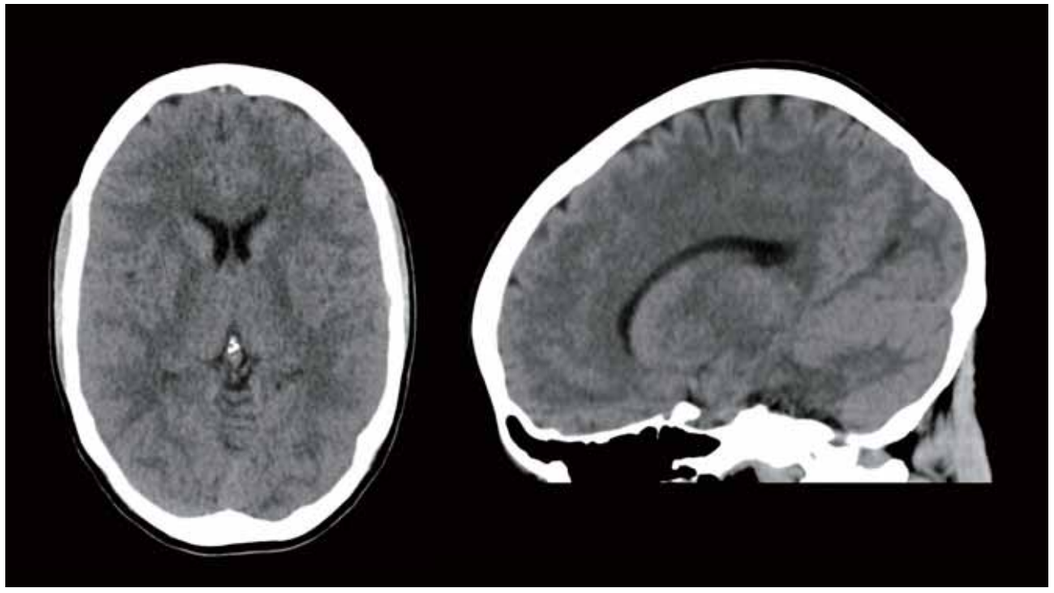
* Adaptive Iterative Dose Reduction

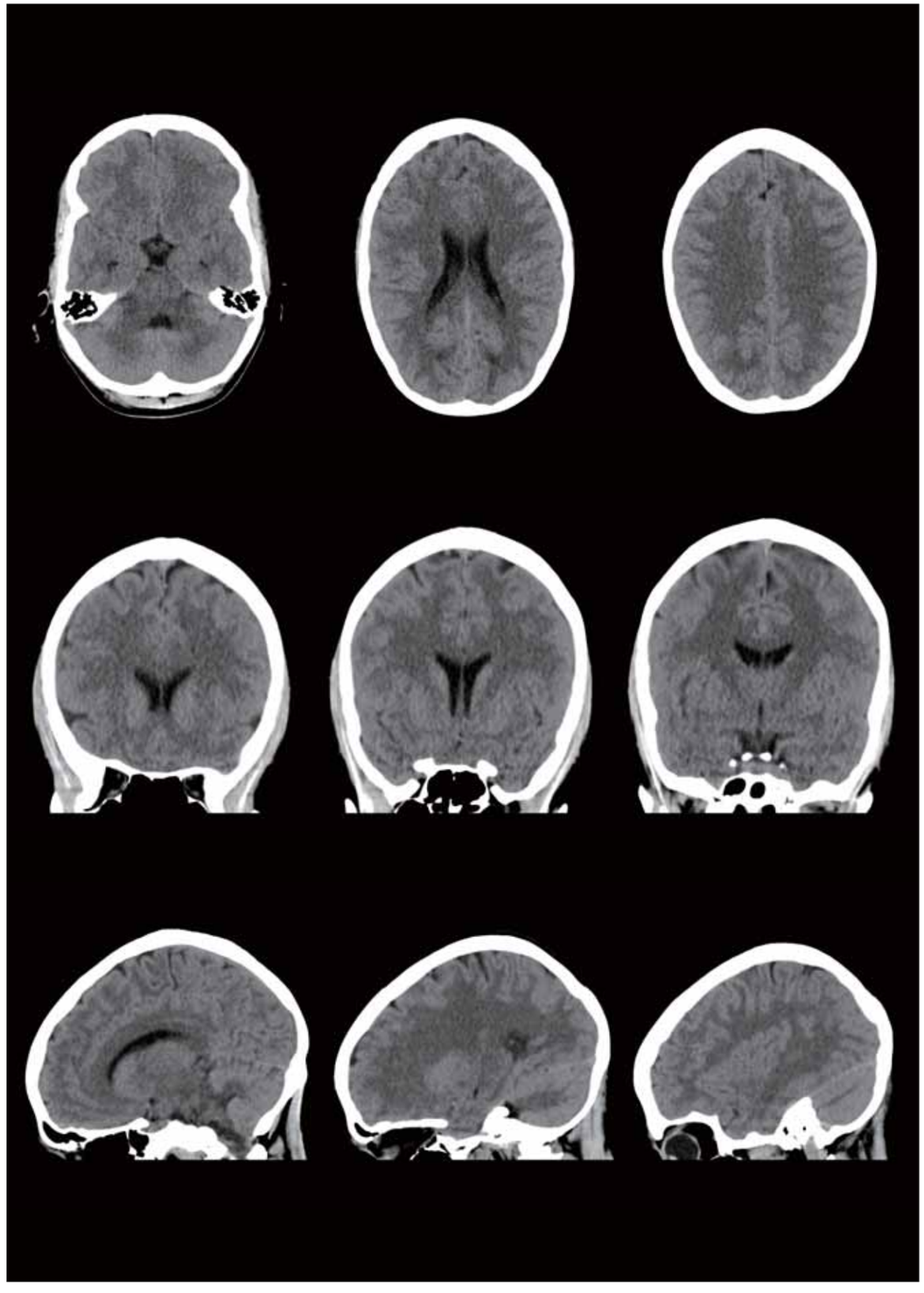


Routine Brain

This brain scan of a 26-year-old woman permits clear identification of the gyral pattern, basal cistern, and foramen magnum. No abnormalities are seen.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Helical	—	0.5 mm x 40	Detail	120	240	0.75	240	AIDR 3D Enhanced	59.1	948.5	1.99	0.0021

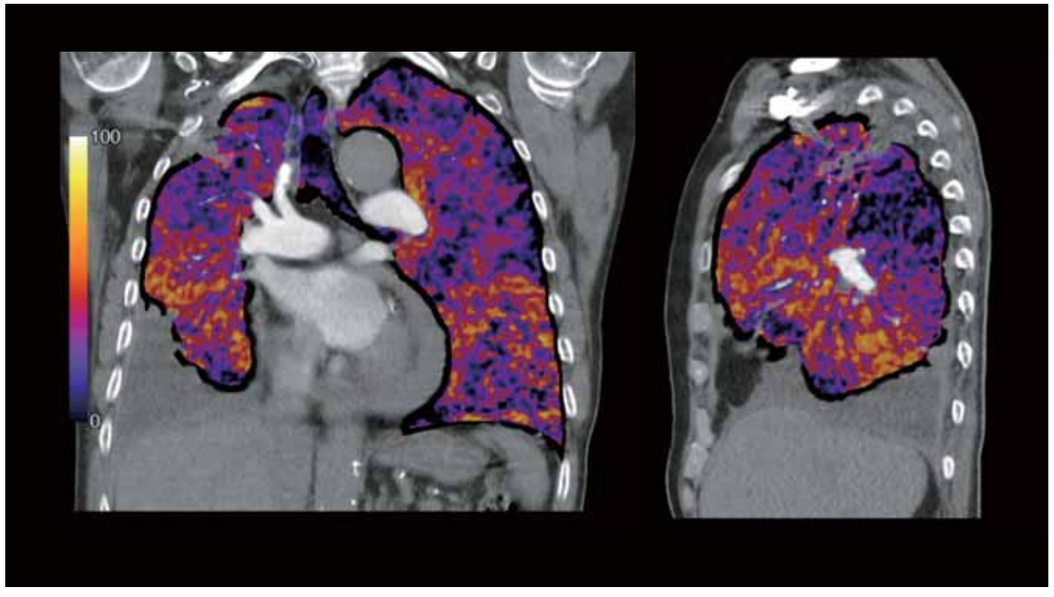


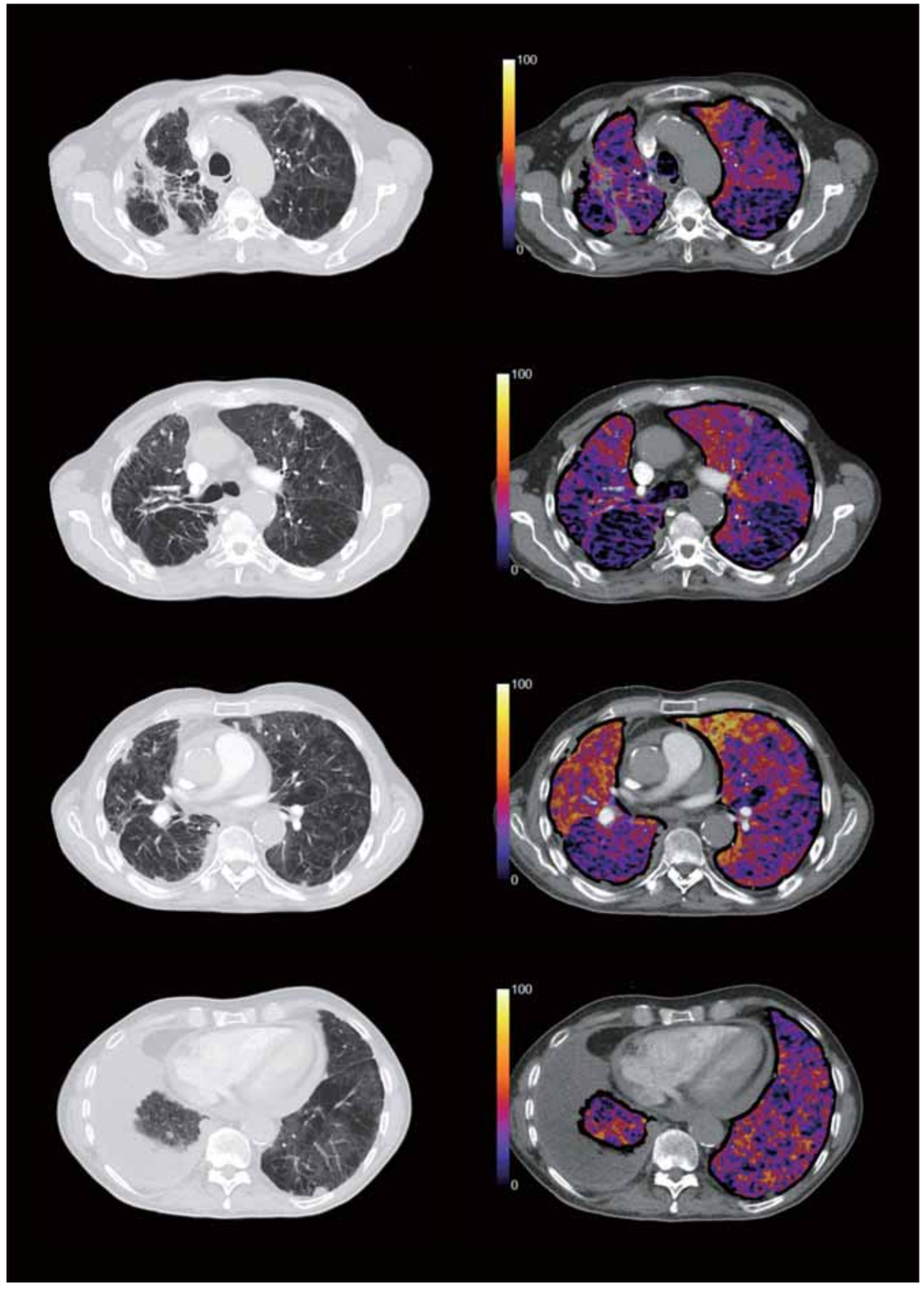


SURE Subtraction Lung

This 75-year-old man with a long history of smoking was sent for a CT scan. Multiple tumors are seen in both lungs, which also show evidence of COPD. SURE Subtraction Lung was performed to provide additional blood flow information.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Ultra-Helical	CE	0.5 mm x 80	Standard	100	SURE Exposure™ 3D	0.275	295	AIDR 3D Enhanced	0.8	30.9	0.4	0.014
Ultra-Helical	CE	0.5 mm x 80	Standard	100	SURE Exposure 3D	0.275	295	AIDR 3D Enhanced	2.7	97.7	1.3	0.014

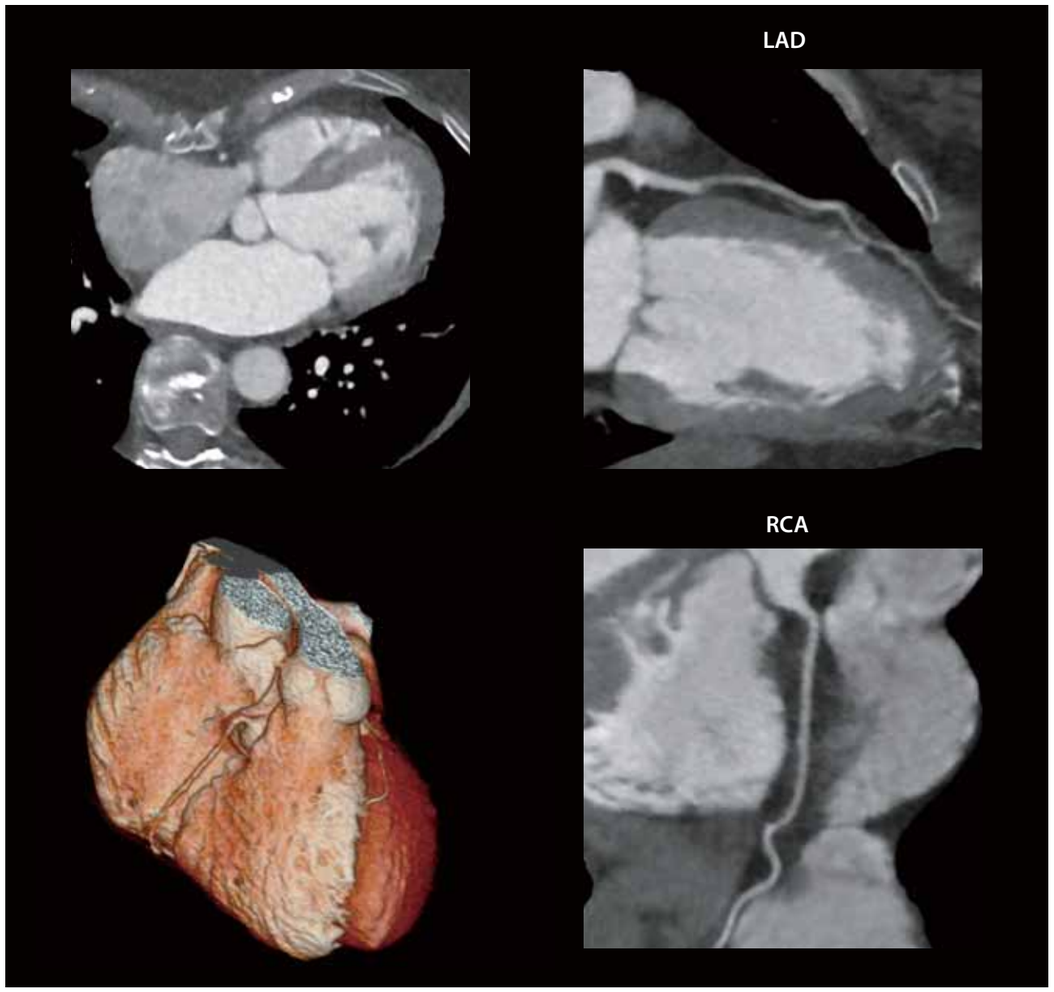




Low Dose Cardiac

This 68-year-old woman with a heart rate of 88 bpm presented with atypical chest pain. A one beat prospective scan was performed for a low radiation dose of just 0.36 mSv. The coronary arteries are normal.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Volume	CE	0.5 mm x 260	-	SURE kV 80	SURE Exposure 3D	0.275	130	FIRST	2.0	25.6	0.36	0.014



Cardiac

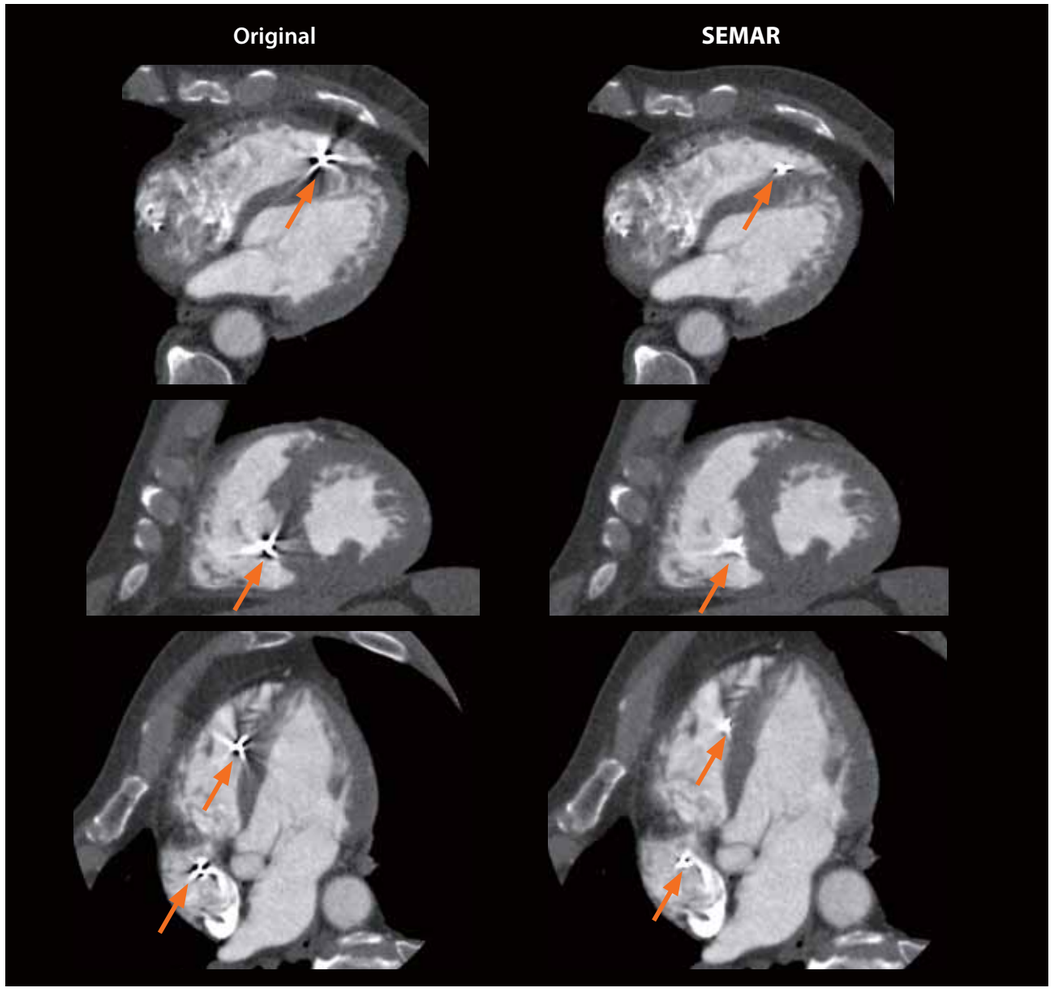
This 68-year-old man with a BMI 28.7 presented with atypical chest pain. This scan was performed with FIRST (Forward projected model based Iterative Reconstruction SoluTioN) ensuring automatic dose reduction for the prescribed level of image quality.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Volume	CE	0.5 mm x 280	—	SURE kV 100	SURE Exposure 3D	0.275	140	FIRST	6.3	88.8	1.24	0.014

Cardiac Pacemaker SEMAR

This 65-year-old man with a heart rate of 83 bpm and a BMI of 27.4 presented following a pacemaker insertion. Metallic artifacts from the pacemaker leads are significantly reduced utilizing Single Energy Metal Artifact Reduction (SEMAR) reconstruction technology.

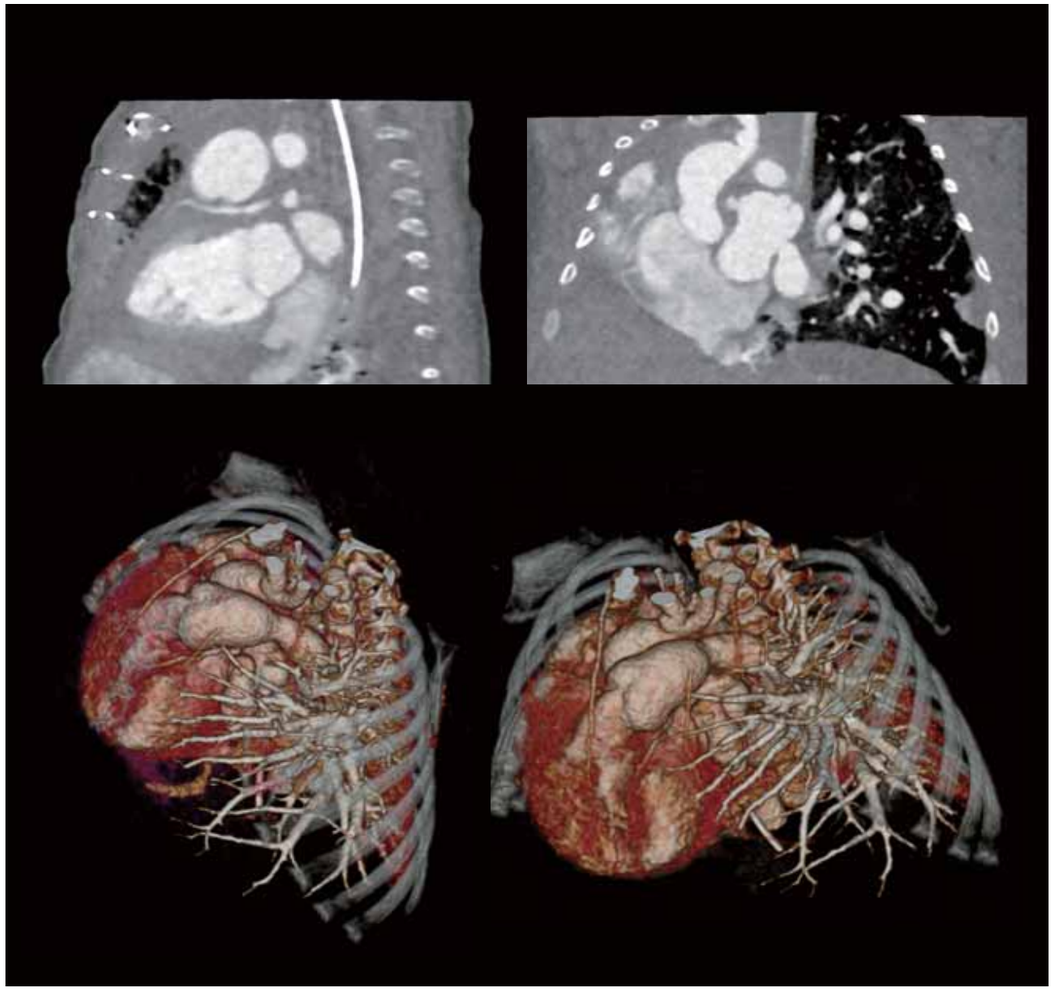
Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Volume	CE	0.5 mm x 280	—	SURE kV 100	SURE Exposure 3D	0.275	140	AIDR 3D Enhanced	5.4	74.9	1.05	0.014



Pediatric Cardiac

This 3-month-old baby had suspected congenital defects of the heart. With a heart rate of 131 beats per minute, an ECG gated ultra low dose volume scan was performed in one rotation with a total scan time of just 0.275 s.

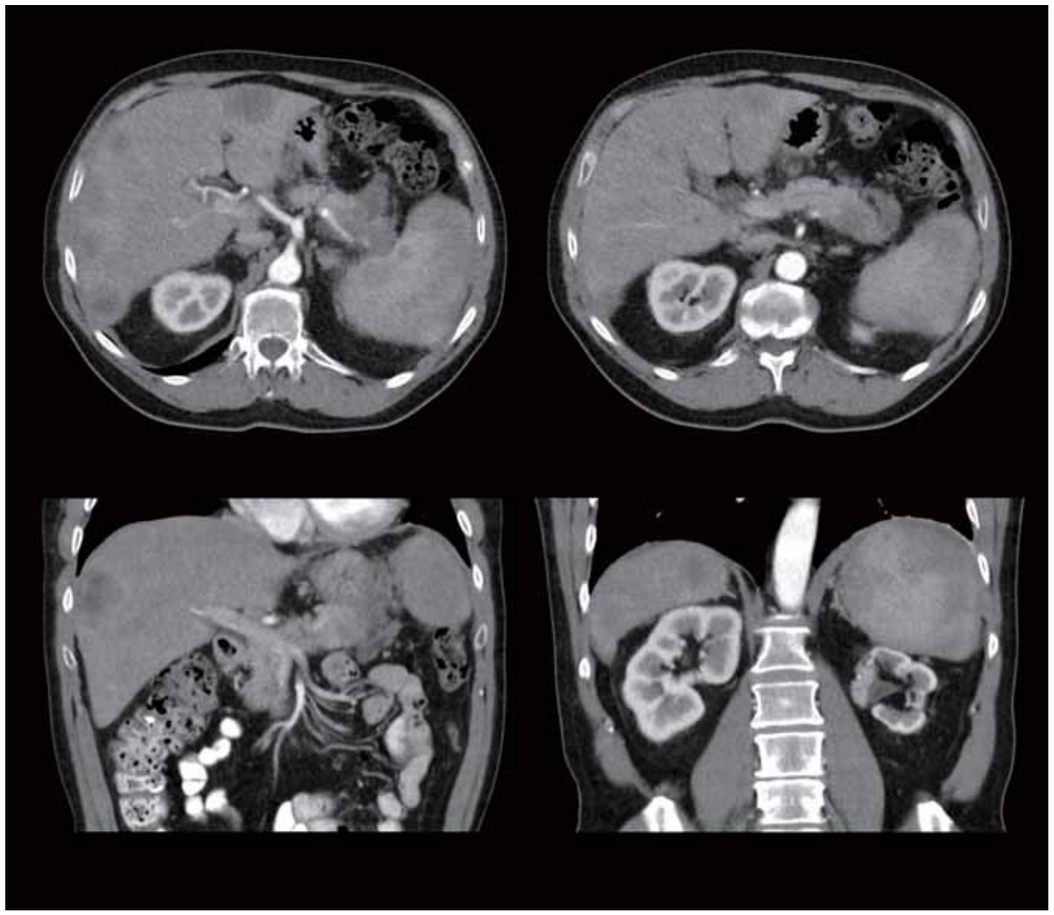
Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Volume	CE	0.5 mm x 320	—	SURE kV 80	SURE Exposure 3D	0.275	80	FIRST	0.7	5.8	0.22	0.039



Liver Metastases

This 70-year-old man with liver metastases underwent a follow-up CT scan. An arterial scan of the liver and a portal venous scan of the chest and abdomen were performed. Excellent depiction of the patient's disease is clearly demonstrated.

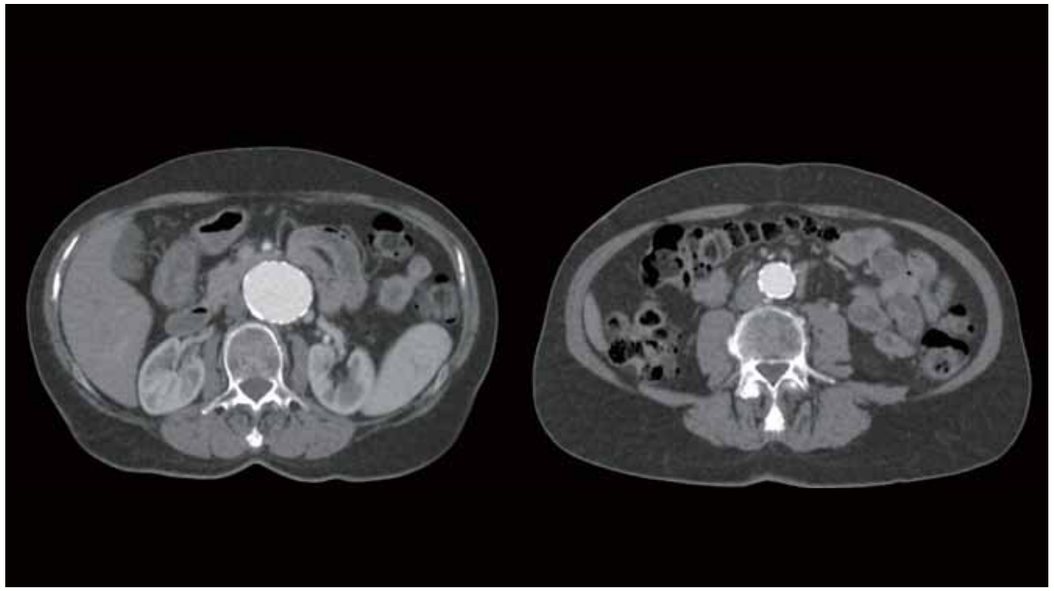
Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Ultra Helical	CE	0.5 mm x 80	Standard	120	SUREExposure 3D	0.5	240	AIDR 3D Enhanced	6.3	179.7	2.69	0.014
Ultra Helical	CE	0.5 mm x 80	Standard	120	SUREExposure 3D	0.5	645	AIDR 3D Enhanced	6.6	456.1	6.61	0.0145

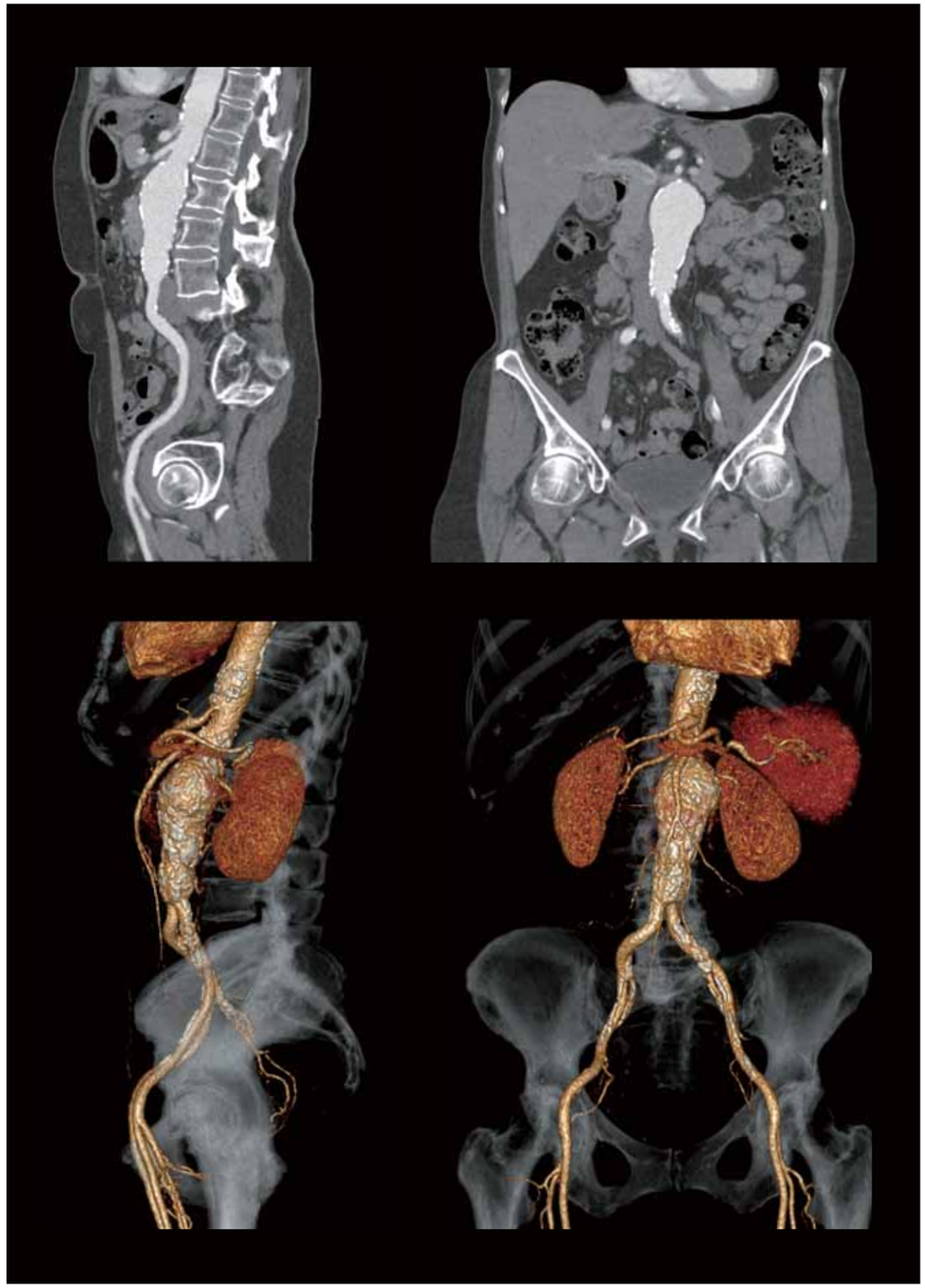


Abdominal Aortic Aneurysm

This 64-year-old woman presented with an abdominal aortic aneurysm. A CT was requested for stent graft planning.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Ultra Helical	CE	0.5 mm x 80	Standard	SURE kV 100	SURE Exposure 3D	0.275	444	FIRST	4.2	209	3.13	0.015

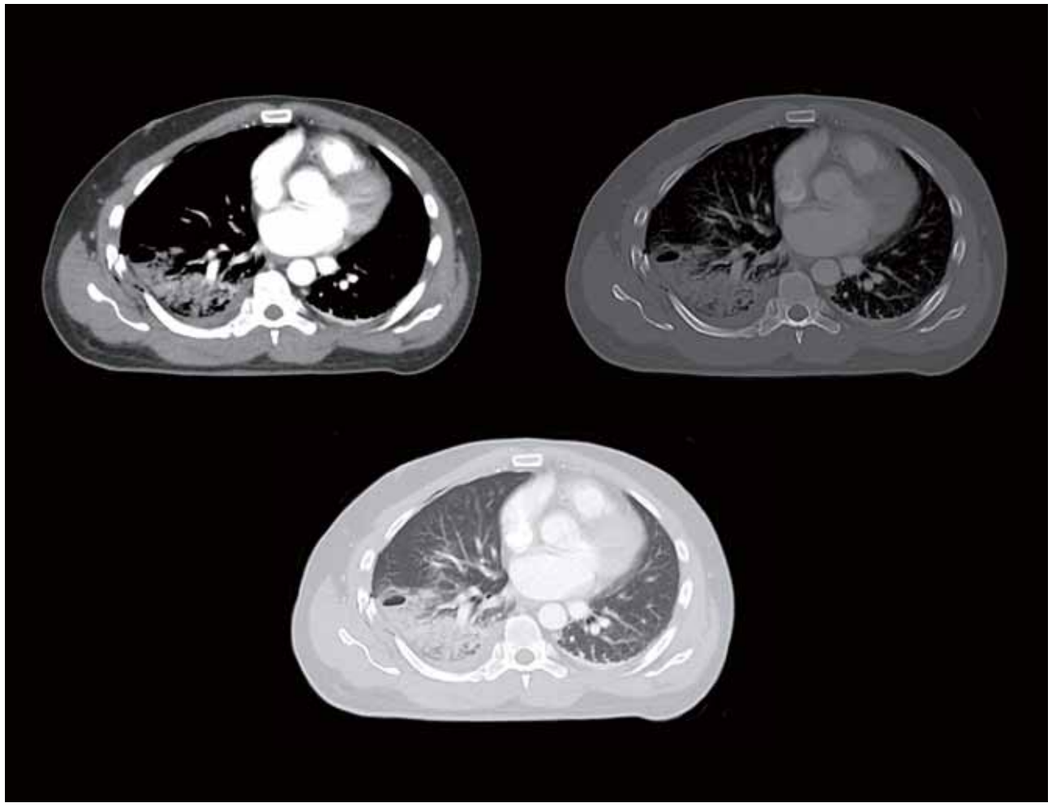


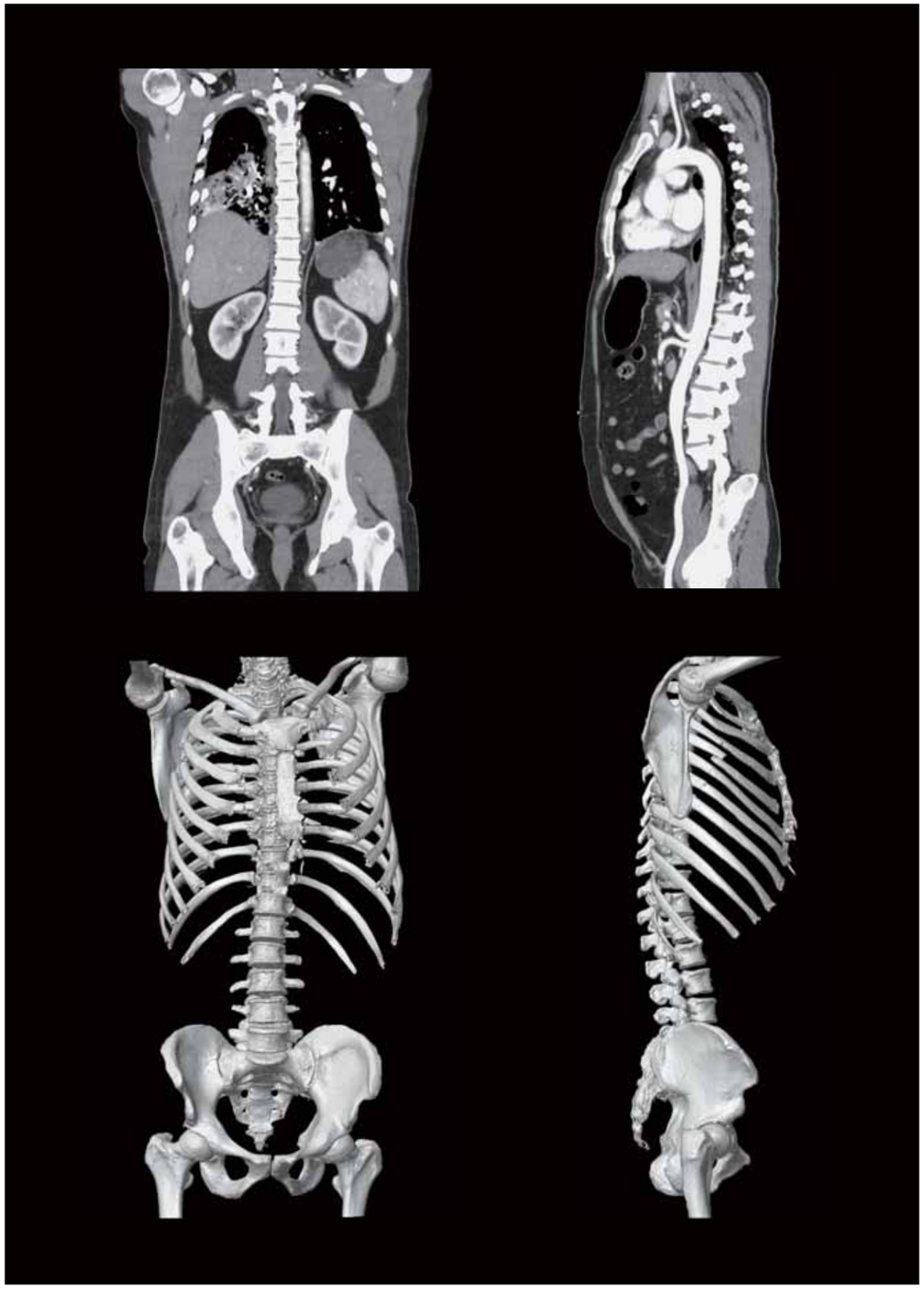


Motor Vehicle Accident

This 45-year-old man presented to the emergency department following a motor vehicle accident. A CT scan of the chest, abdomen and pelvis was requested to evaluate the extent of his injuries. In the chest, multiple rib fractures are seen, with associated pneumothorax and subcutaneous emphysema. The abdominal organs, spine and pelvis are normal.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Ultra Helical	CE	0.5 mm x 80	Standard	120	SURE Exposure 3D	0.275	444	AIDR 3D Enhanced	6.3	475.2	6.89	0.0145





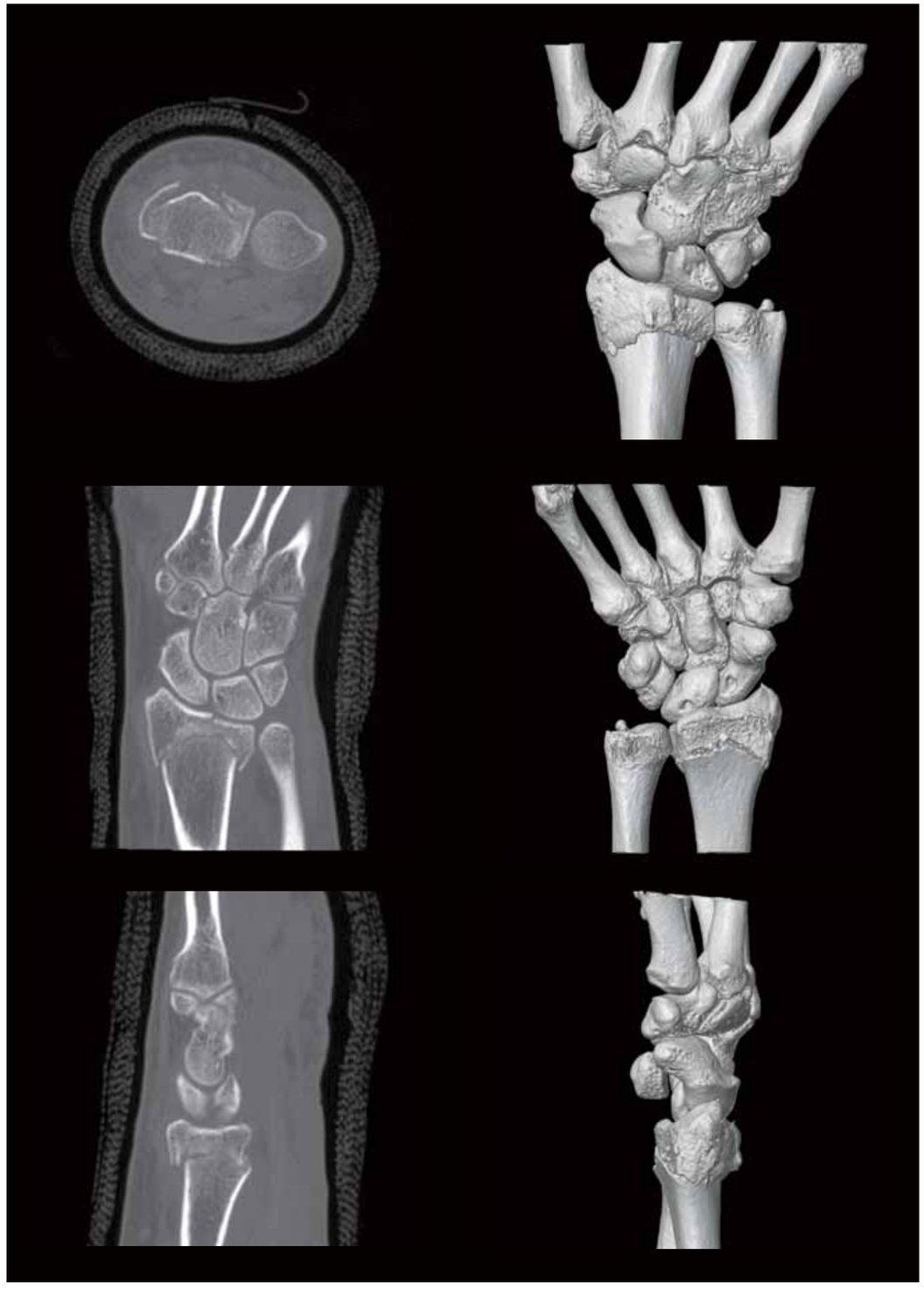
Wrist CT with the ease of X-ray

This 44-year-old woman presented with fracture of the radius following a fall 3 weeks ago. A follow up CT scan was requested after X-ray to provide more details of the fracture. Laser collimation* was used, eliminating the need for scanograms. The patient was sitting in a comfortable position and the scan was performed in 0.275 s.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Volume	—	0.5 mm x 200	—	120	SURE Exposure 3D	0.275	100	FIRST	3.5	34.8	0.02	0.0008

Volumetric scans of extremities and pediatric examinations can be performed as easily as taking a conventional X-ray. Laser collimation allows the field of view and scan range to be set directly from the touch panel control on the gantry.

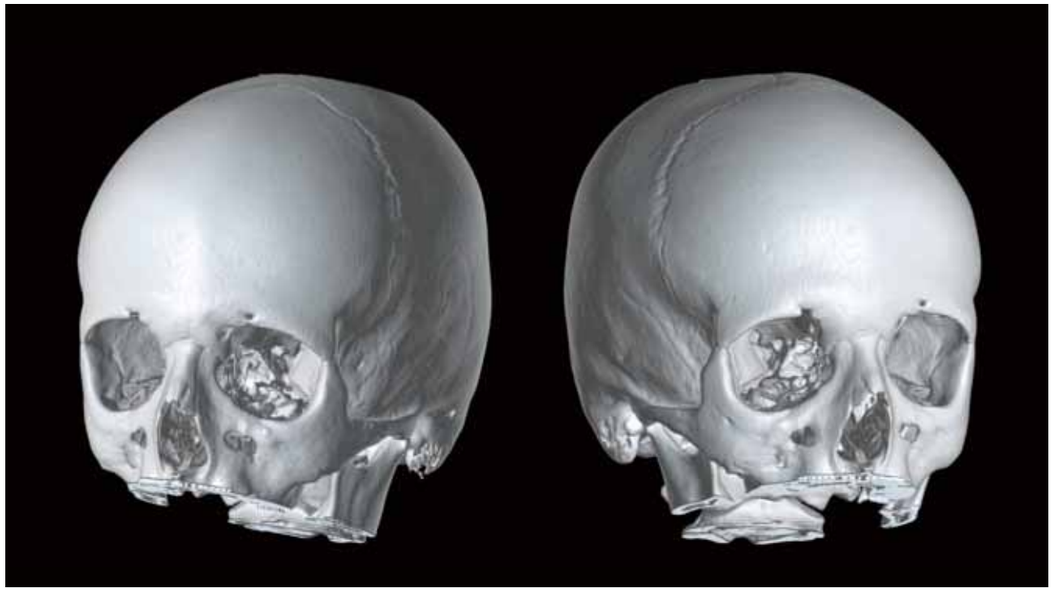
*Option

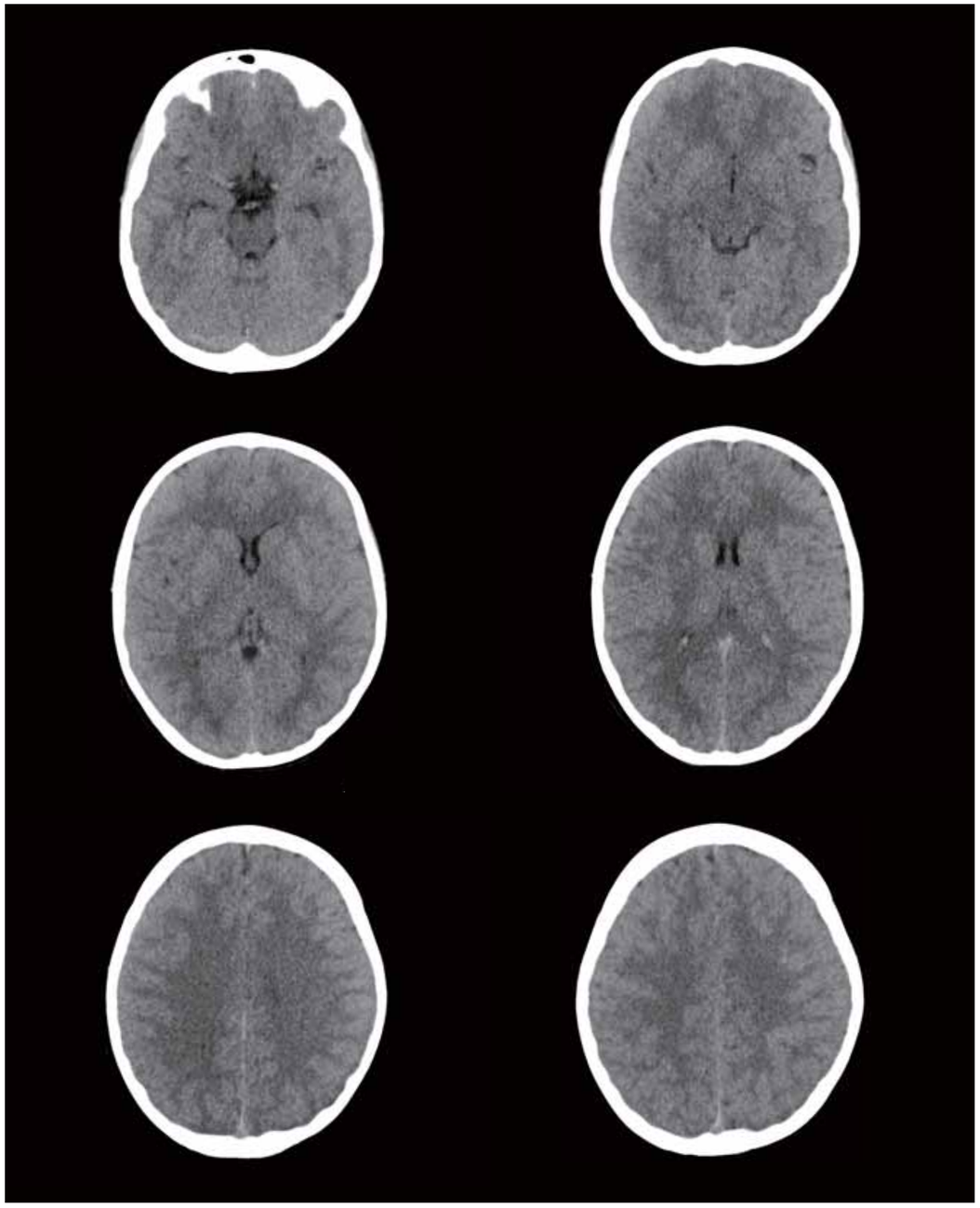


Pediatric Brain in ONE Volume

This 9-year-old boy presented for a CT following a fall. The CT scan was performed in a signle rotation with a total scan time of only 0.5 s. The low dose Volume CT images show excellent image quality with clear gray/white matter visualization. The cistern and ventricles have a normal size. No intracranial blood or bone fractures were detected.

Scan Mode	Contrast	Collimation	Pitch	kVp	mAs	Rotation Time (s)	Scan Range (mm)	Dose Reduction	$CTDI_{vol}$ (mGy)	DLP (mGy·cm)	Effective Dose (mSv)	k
Volume	—	0.5 mm x 320	—	120	215	0.5	160	AIDR 3D Enhanced	27.0	431.7	1.38	0.0032





Disclaimer: Any reference to X-ray exposure is intended as a reference guideline only. The guidelines in this document do not substitute for the judgment of a healthcare provider. Each scan requires medical judgment by the healthcare provider about exposing the patient to ionizing radiation. In clinical practice, the use of the AIDR 3D and FIRST (Forward projected model-based Iterative Reconstruction SoluTion) features may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

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